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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,154	04/08/2004	Yoon-hyeo Kim	Q79288	6669

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EXAMINER

PERRY, ANTHONY T

ART UNIT PAPER NUMBER

2879

DATE MAILED: 09/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/820,154	KIM, YOON-HYEO	
	Examiner	Art Unit	
	Anthony T. Perry	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-9 and 11-13 is/are rejected.
- 7) ☒ Claim(s) 4, 10, 14 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The Amendment filed on 9/05/2006, has been entered and acknowledged by the Examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1-3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagaoka et al. (JP 09-006283).

Regarding claims 1-3, Nagaoka teaches a comprising a rear substrate (101) and a front substrate (106), wherein the rear substrate (101) is spaced a predetermined distance apart from the front substrate (106) and wherein the rear substrate (101) faces the front substrate (106), and a plurality of discharge cells (C) are formed between the front substrate and the rear substrate (see Figs. 1 and 11). The PDP includes a heating portion (9) to heat the rear substrate and the front substrate. The heating portion comprises a heat generating body and a controlling portion for controlling the heat generating body to generate heat only at a predetermined temperature or less, and the controlling portion comprises a circuit portion for allowing a current to flow into the heat generating body according to a sensed temperature (for example, see paragraphs 0142 and 0232-0233).

Nagaoka does not specifically recite that the heating portion (9) is located at the rear of the rear substrate. It is noted that the applicant's specific location of the heating portion does not solve any of the stated problems or yield any unexpected result that is not within the scope of the teachings applied. Therefore it is considered to be a matter of choice, which a person of ordinary skill in the art would have found obvious to select any suitable position for the placement of the heating portion as desired. The heating portion obviously isn't located on the front surface of the front substrate or in between the two substrates, since this would block at least a portion of the display area. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the heating portion at the rear of the rear substrate so as to maximize the effective viewing area of the display. For example, if the coil were placed below, on the side, or at the top of the PDP, a bigger frame surrounding the effective screen would have to be provided such that the width and height of the display would be unnecessarily big. Also if the heating portion were only located on the side edges of the substrate the cells located at the outer edges of the display would be heated to a higher degree than the cells in the center of the display, and it is more likely that blinking of the cells (C) in the center of display would occur.

Regarding claim 6, Nagaoka does not specifically state the temperature at which the heat generating body is initiated. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980). Thus, it would have been obvious to one of ordinary skills in the art at the time the invention was made to set the predetermined low-temperature at a temperature where the display becomes compromised, for example 0 °C, since discovering an optimum value of a result variable is considered within the skills of the art.

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Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagaoka et al. (JP 09-006283) as applied to claim 1, above, and further in view of Anderson et al. (US 6,369,706).

Regarding claim 5, Nagaoka does not specifically teach what type of object is used as the heating element (9). However, Anderson teaches a heating device used for the same reasoning, for warming a display device to protect it from potentially harmful cold temperatures. Anderson teaches the warming device being a heating coil. Accordingly, it would have been obvious to one having ordinary skills in the art at the time the invention was made to have use a heating coil as the heating element of the Nagaoka reference, since the selection of known materials for a known purpose is within the skill of the art.

Claims 7-9, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's admitted prior art in view of Nagaoka et al. (JP 09-006283).

Regarding claims 7 and 11, the Applicant's admitted prior art teaches a plasma display panel comprising a rear substrate (10) and a front substrate (20), wherein the rear substrate (10) is spaced a predetermined distance apart from the front substrate (20) and wherein the rear substrate (10) faces the front substrate (20), and a plurality of discharge cells (14) are formed between the front substrate and the rear substrate; a plurality of first electrodes (11) formed on an inner surface of the rear substrate (10); a first dielectric layer (12) formed on the inner surface of the rear substrate (10), covering the plurality of first electrodes (11); a plurality of partitions (13) formed on a surface of the first dielectric layer (12) to define the discharge cells (14); a phosphor layer (15) formed on sidewalls of the partitions (13) and on a surface of the first dielectric layer (12); a plurality of second electrodes (21,22) formed on an inner wall of the front substrate (20), corresponding to the plurality of the first electrodes (11); a second dielectric layer (23) formed

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on the inner wall of the front substrate (20) to cover the plurality of the second electrodes (21,22); a protective layer (24) formed of MgO formed on a surface of the second dielectric layer (23) (see Fig. 1).

The Applicant's prior art fails to teach a heating portion at a rear of the rear substrate for heating the PDP substrates. However, Nagaoka teaches a heating portion on the rear of the rear substrate for heating the PDP in order to reduce malfunction of the display device when present in low temperatures (for example, see paragraphs 0121-0123). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a heating portion at the rear of the rear substrate to keep the display device operating consistently even when ambient temperatures are low.

Regarding claims 8-9, The heating portion comprises a heat generating body and a controlling portion for controlling the heat generating body to generate heat only at a predetermined temperature or less, and the controlling portion comprises a circuit portion for allowing a current to flow into the heat generating body according to a sensed temperature (for example, see paragraphs 0142 and 0232-0233).

Regarding claim 13, Nagaoka does not specifically recite the temperature at which the heat generating body is initiated. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. Thus, it would have been obvious to one of ordinary skills in the art at the time the invention was made to set the predetermined low-temperature at a temperature where the display becomes compromised, for example 0 °C, since discovering an optimum value of a result variable is considered within the skills of the art.

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Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's admitted prior art in view of Nagaoka et al. (JP 09-006283) and further in view of Anderson et al. (US 6,369,706).

Nagaoka does not specifically teach what type of object is used as the heating element (9). However, Anderson teaches a heating device used for the same reasoning, for warming a display device to protect it from potentially harmful cold temperatures. Anderson teaches the warming device being a heating coil. Accordingly, it would have been obvious to one having ordinary skills in the art at the time the invention was made to have use a heating coil as the heating element of the Nagaoka reference, since the selection of known materials for a known purpose is within the skill of the art.

Allowable Subject Matter

Claims 4, 10, 14, and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Prior art fails to disclose or fairly suggest:

- The heating portion including a thermistor and a field effect transistor, wherein the transistor allows current to flow into the heat generating body according to the level of the resistance of the thermistor, in combination with the remaining claimed limitations as called for in claims 4, 10, 14, and 15.

Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ohnishi et al. (US 6,885,412) reads on at least claims 1-3.

Cokefair (US 4,520,290), Kobale et al. (US 4,663,564), and Hibino et al. JP 11-233028) describe heating elements used to protect gas discharge displays from cold temperatures.

Response to Arguments

Applicant's arguments filed 9/05/06 have been fully considered but they are not persuasive.

Applicant's arguments with respect to claims 1-3 have been considered but are moot in view of the new ground(s) of rejection.

In response to the Applicant's argument that Anderson teaches away from Nagaoka the Examiner respectfully disagrees. The reason why the heating coil in the Anderson reference is located along the periphery of the screen is because the device is an LCD which needs to be transparent on both the front surface and rear surface of the substrates. LCDs, unlike plasma display panels, require backlights. The heating coil cannot be placed on the rear surface of the rear substrate of the LCD because it would interfere with light emitted from the backlight producing an unfavorable disruption of the display. Naturally one of ordinary skill in the art would place the heating coil of the Anderson reference on the rear surface of the rear substrate of the Nagaoka PDP since it would not interfere with the display and so that a greater surface area expanding the entire area of the individual cells of the PDP can be heated to prevent flickering of the individual pixels. One of ordinary skill in the art would not place it on the periphery of the

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PDP since this would only provide a sufficient means for heating the outside pixel cells, and the center pixel cells would still be likely to blink.

Contact Information

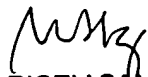
Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Anthony Perry* whose telephone number is **(571) 272-2459**. The examiner can normally be reached between the hours of 9:00AM to 5:30PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. **The fax phone number for this Group is (571) 273-8300.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Anthony Perry
Patent Examiner
Art Unit 2879
September 18, 2006



MARICELI SANTIAGO
PRIMARY EXAMINER